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**THE ELECTRICITY WORKS (ENVIRONMENTAL IMPACT ASSESSMENT)
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**SCOPING OPINION FOR THE PROPOSED
SECTION 36 APPLICATION FOR NEART NA GAOITHE OFFSHORE WIND
FARM**

1. Introduction

I refer to your letter of 9 November 2009 requesting a scoping opinion under the Electricity Works (Environmental Impact Assessment)(Scotland)(EIA) Regulations 2000 and Regulation 13 of the Marine Works (Environmental Impact Assessment) Regulations 2007 enclosing a scoping report dated November 2009.

Any proposal to construct or operate an offshore power generation scheme with a capacity in **excess of 1 megawatt** requires Scottish Ministers' consent under section 36 of the Electricity Act 1989.

Schedule 9 of the Act places on the developer a duty to "have regard to the desirability of preserving the natural beauty of the countryside, of conserving flora, fauna and geological and physiological features of special interest and of protecting sites, buildings and objects of architectural, historic or archaeological interest". In addition, the developer is required to give consideration to Scottish Planning Policy 6 on Renewable Energy, other relevant Policy and National Policy Planning Guidance, Planning Advice Notes, the relevant planning authority's Development Plans and any relevant supplementary guidance.

Under the Electricity Works (Environmental Impact Assessment)(Scotland)(EIA) Regulations 2000, Scottish Ministers are required to consider whether any proposal for an offshore device is likely to have a significant effect on the environment. Scottish Ministers have considered your request for an opinion on the proposed content of the ES in accordance with regulations and in formulating this opinion, Scottish Ministers have consulted the planning authority, Scottish Natural Heritage, Scottish Environment Protection Agency, and other relevant consultees. If we subsequently receive responses, we will forward them directly to you.

Please note that the EIA process is vital in generating an understanding of the biological and physical processes that operate in the area and may be impacted by the proposed wind farm. We would however state that references made within the scoping document with regard to the significance of impacts should not prejudice the outcome of the EIA process.

It is important that any development of renewable energy sources should be accompanied by a robust assessment of its environmental impacts. The assessment should also consider how any negative environmental impacts could be avoided or minimised, through the use of mitigating technologies or regulatory safeguards, so that the quality and diversity of Scotland's wildlife and natural features are maintained and enhanced. Scottish Ministers welcome the commitment given in the report that the EIA process will identify mitigation measures in order to avoid, minimise or reduce any adverse impacts. We would suggest that the range of options considered should be informed by the EIA process in order that these objectives can be achieved. Consultation with the relevant nature conservation agencies is essential and it is advised that this is undertaken as appropriate.

2. Aim of this Scoping Opinion

Scottish Ministers are obliged under the EIA regulations to respond to requests from developers for a scoping opinion on outline design proposals.

The purpose of this document is to provide advice and guidance to developers which has been collated from expert consultees whom the Scottish Government has consulted. It should provide clear advice from consultees and enable developers to address the issues they have identified and address these in the EIA process and the Environmental Statement associated with the application for section 36 consent.

3. Description of your development

Offshore elements

From your submitted information it is understood, the proposed development is for a proposed offshore wind farm with the approximate electrical output of up to 450 Megawatts (MW) located 15.5 km East of Fife Ness. The development is proposed to consist of approximately 75 turbines.

4. Relevant Legislation & Planning Policies

All applications (including those made prior to 1 April 2006) made to Scottish Ministers for consent under section 36 of the Electricity Act 1989 to construct and operate a electricity generating scheme are required to comply with legislation. For offshore windfarm development this is as follows:

Marine Scotland & Licensing

Marine Scotland is the lead marine management organisation in Scotland. It was established on April 1 2009 as a Directorate of the Scottish Government, to integrate core marine functions involving scientific research, compliance monitoring, policy and management of Scotland's seas. Marine Scotland combines the functions and resources of the former SG Marine Directorate, Fisheries Research Services and the Scottish Fisheries Protection Agency. Legislation relating to the marine environment is currently being updated by The Marine (Scotland) Bill, introduced to Parliament on April 29, 2009 and which is

currently being debated. This Bill introduces a framework for the sustainable management of the seas around Scotland, ensuring that their protection is integrated with economic growth of marine industries.

The main intention of the Bill is to update the planning system for the marine environment so that the increasing, and potentially conflicting, demands on our seas are well-managed, and sustainably so. It is also intended to streamline and simplify the licensing system, hopefully to minimise the number of licences required for development in the marine environment.

Marine Scotland is likely to act as the over-arching administrator for any updated licensing system and further details will be available once the changes have taken place. It is highly likely that these changes will have already occurred by the time you make any application and we recommend that you check the website.

It is intended that the current licensing requirements under Part II of the Food and Environment Protection Act 1985 and section 34 of the Coast Protection Act 1949 will be incorporated into the streamlined marine licensing system.

National & Scottish Planning Policies

Under planning reform, Scottish Government is proposing to amalgamate the series of Scottish Planning Policies (SPPs), National Planning Policy Guidelines (NPPGs) and Planning Advice Notes (PANs). The SG Planning Division is the key contact with whom to discuss these planning policies and the intended updates. Listed below are the current NPPGs, SPPs and PANs that are generally relevant to offshore windfarms (including both onshore and offshore elements).

- National Planning Framework for Scotland
- SPP1: The Planning System
- SPP6: Renewable Energy
- SPP7: Planning and Flooding
- SPP15: Planning for Rural Development
- SPP17: Planning for Transport
- SPP 21: Green Belts
- NPPG5: Archaeology and Planning
- NPPG14: Natural Heritage
- NPPG18: Planning and Historic Environment
- PAN42: Archaeology – Planning Process and Scheduled Monument Procedures
- PAN45: Renewable Energy Technologies
- PAN 50: Controlling the Environmental Effects of Surface Mineral Workings
- PAN 51: Planning, Environmental Protection and Regulation
- PAN56: Planning and Noise
- PAN58: Environmental Impact Assessment
- PAN60: Planning for Natural Heritage
- PAN68: Design Statements
- PAN69: Planning and Building Standards Advice on Flooding
- PAN 75: Planning for Transport
- PAN 79: Water and Drainage
- PAN 81: Community Engagement – Planning with People. Development in the Countryside and Green Belts: SDD circular 24/1985• Habitats Directive: SOED

Circular 6/95 (as revised June 2000)

- Scottish Government Interim Guidance on European Protected Species, Development Sites and the Planning System.
- Marine Guidance Note 275 (M)

Local Authority Guidance

It will be necessary to have regard to Development Plans (currently being prepared – SESPLAN and TAYPLAN) and any Supplementary Planning Guidance that has been produced by the relevant local authority (or authorities). For this offshore wind proposal the key local authority contacts are Angus Council, Dundee City Council, Fife Council, Edinburgh & Lothians Councils, and possibly Scottish Borders Council.

Planning identify relevant policies from the East Lothian (2008) local plan.

Cockenzie - policies of the local plan that apply are:

NH1a Internationally Protected Areas
NH1b Sites of Special scientific Interest
C3 Protection of open space

Thorntonloch - policies of the local plan that apply are

C3: protection of open space
DC1 Development in the countryside
NH4 Areas of great landscape value
NRG2 torness consultation zone

Skateraw - Policies of the local plan that apply

C3 - protection of open space
NH1b - SSSI
DC1 - Development in countryside
NH4 - Area of great landscape value
NRG2 - Torness consultation zone

Strategic Environmental Assessment

Strategic Environmental Assessment (SEA) is a process to ensure that significant environmental effects arising from policies, plans and programmes are identified, assessed and communicated to decision-makers, and that opportunities for public involvement are provided. It is a generic tool which can be used in a variety of situations. For more information on SEA, including the stages of the process, the Government's SEA gateway⁵ contains useful guidance.

For the offshore environment, the UK has well-established SEA procedures, having promoted SEA for oil and gas, and for aggregates. More information is available from the Department of Energy and Climate Change (DECC) who have set up a specific website for reporting on, and publishing, the SEAs they have carried out. Most recently, SEA 8 included consideration of the potential for offshore wind energy to achieve 25GW of additional generation capacity by 2020. This SEA considered leasing for offshore wind in the UK Renewable Energy Zone and the territorial waters of England and Wales but it does not include the territorial waters of Scotland and Northern Ireland.

For Scottish territorial waters, Marine Scotland has commissioned an SEA for offshore wind and this is currently being undertaken.

5. Natural Heritage

Scottish Natural Heritage (SNH) has produced a service level statement (SLS) for renewable energy consultation. This statement provides information regarding the level of input that can be expected from SNH at various stages of the EIA process. Annex A of the SLS details a list of references, which should be fully considered as part of the EIA process. A copy of the SLS and other vital information can be found on the renewable energy section of their website – www.snh.org.uk

6. General Issues

Economic Benefit

The concept of economic benefit as a material consideration is explicitly confirmed in SPP 6. This fits with the priority of the Scottish Government to grow the Scottish economy and, more particularly, with our published policy statement “Securing a Renewable Future: Scotland’s Renewable Energy”, and the subsequent reports from the Forum for Renewables Development Scotland (FREDS), all of which highlight the manufacturing potential of the renewables sector. The application should include relevant economic information connected with the project, including the potential number of jobs, and economic activity associated with the procurement, construction operation and decommissioning of the development.

7. Contents of the Environmental Statement (ES)

Format

Developers should be aware that the ES should also be submitted in a user-friendly PDF format which can be placed on the Scottish Government website.

A description of the methodology used in assessing all impacts should be included.

It is considered good practice to set out within the ES the qualifications and experience of all those involved in collating, assessing or presenting technical information.

Non Technical Summary.

This should be written in simple non-technical terms to describe the various options for the proposed development and the mitigation measures against the potential adverse impacts which could result. Within an ES it is important that all mitigating measures should be:

- clearly stated;
- fully described with accuracy;
- assessed for their environmental effects;
- assessed for their effectiveness;
- their implementation should be fully described;
- how commitments will be monitored; and
- if necessary, how they relate to any consents or conditions.

Given that the layout and design are still developing and evolving, the exact nature of the work that is needed to inform the EIA may vary depending on the design choices. The EIA must address this uncertainty so that there is a clear explanation of the potential impact of each of the different scenarios. It should be noted that any subsequent components/scenarios procured after the ES is submitted would be subject to further environmental assessment and public consultations period if deemed to be significant.

Site selection and alternatives

SNH state that the developer will need to consider the environmental, navigational and other effects of operation and maintenance activities – the timing and frequency of routine and emergency visits, the number of boats and / or helicopters required, and the range of activities which may need to be undertaken. This information should be detailed in the ES.

SNH note that the application is for a 40 year lease, and that you intend to repower the site after 20 years. You will need to consider the environmental, navigational and other effects of repowering your site and set this out in the ES.

RSPB argue that site selection should, strictly, have awaited the outcome of the Strategic Environmental Assessment for Offshore Wind Energy Development in Scottish Marine Waters. RSPB are concerned that site selection has apparently been made largely on the grounds of navigation, water depth and technical constraints and not primarily on ecological constraints. However, it is recognised that there are issues in respect of the mobile nature of both birds and marine mammals.

Description of the Development

SNH state that the assessment of impacts will need to be carried out for each phase of development and in respect of the various issues detailed in Section 6. It would also be helpful for the ES to include the following overarching information in respect of each phase of development

East Lothian Council recommend that the description of the development should include specification of the turbines as far as it is known, including the proposed colour(s). It should also include any other infrastructure that might be necessary and form part of the application. This should include details of the onshore substation and cable routes.

Royal Yachting Association state that the layout, spacing and direction of the set of turbines are crucial to avoid impeding navigation, particularly under sail. The relationship of the planned development to others in the area also needs to be considered as cumulative impacts of offshore developments can also affect the safety of navigation. RYA welcome the creation of the Firth of Forth, Firth of Tay Developers Group in this respect but are concerned about the neighbouring potential Round 3 site.

Decommissioning

SNH believe that the developer should consider decommissioning options at this stage and set out a broad overview of these options in the ES.

RSPB Scotland would like to see details of proposed mitigation measures for the decommissioning and reinstatement of the site included in the Environmental Statement (ES) as such processes have the potential to adversely impact the marine environment.

It is difficult to predict what society may require at the “end of life” of the wind farm in respect of the structures and possible future uses. However, RSPB believe that a range of possible scenarios should be assessed.

According to the Royal Yachting Association, any decommissioning plan should ensure that the structures are completely removed. Any parts of the structure remaining after the commercial operation of the installation may pose a hazard to navigation and should be avoided. However, RYA recognise that secondary uses may be identified for these structures once energy generation ceases. If structures are to remain in the water, navigational safety must be taken into account and structures should be appropriately marked and lit.

Marine and Coastguard Agency insist that decommissioning proposals should follow the DTI Guidance notes for Industry.

Grid Connection Details

SNH state that the issues that need to be considered in respect of onshore elements are primarily those set out in Section 6c of their response – although some of the overarching issues discussed in Section 6a are also relevant (in particular, as far as SNH is concerned, Section 6aii –Landscape & Visual Amenity and Section 6av – Designated Sites). SNH state that it would be useful to have clearer information on the possible cable landings and connection routes to the national grid that are being considered (please see further comment in Section 6ci – Terrestrial Habitats).

In respect of Habitats Regulations Appraisal (see Section 4v above), it should be clear that the effects of both offshore and onshore works (including the grid connection) will need to be considered. It is possible that HRA may need to include cumulative assessment of the effects of offshore works and onshore works together, and in combination with other plans and projects, in respect of some Natura sites.

SNH advise that for cable routes and cable landings, an experienced coastal geomorphologist is employed to assess the various options at multiple scales from the macro (regional) level down to detailed micro-siting. It is important that the route of the cable through the ‘wave base’ (the region where waves actively affect the seabed from the shoreline to about 15m water depth) is carefully chosen, as is the landing point itself. Considered appropriately, the geomorphology of an area can often be used as protection for a cable.

SEPA suggest that the proposed location for the onshore grid connection may be at risk of coastal flooding. With this in mind SEPA recommend that the developers consider the risks of coastal flooding to the onshore grid connection facilities. This should be suitably addressed within the ES.

Note that Skateraw is where the Dunbar lifeboat is moored and, if this site is chosen, the impact on the lifeboat service during construction and operation needs to be considered. RYA note that the Royal National Lifeboat Institution does not appear to be on the list of consultees and this omission should be rectified.

The submitted scoping report suggests two sites for an on-shore grid connection to accept the electricity generated by the windfarm. Two sites are identified as Cockenzie and Torness to Thorntonloch. Both Seton Sands to the east of Cockenzie and Thorntonloch are EC Designated bathing waters and have considerable amenity value. This should be reflected within the ES.

RSPB Scotland would ask that full details of the proposed cable route, landing point and substation are detailed in the ES. It is understood that the results of ecological surveys of the export cable routes will be available by that stage.

RSPB advise that ingress into designated sites should be avoided unless there are no alternatives. Increased disturbance due to construction work and changes in the pattern of sediment transportation and deposition will need to be included in the EIA.

8. Baseline Assessment and Mitigation

Air, Climate and Carbon Emissions

East Lothian Council state that the ES should include an assessment of any micro-climatic changes. This should include any changes to local weather systems especially where this may affect the adjacent land area. It should also include an assessment of any effects on biodiversity resulting from identified changes. This assessment should include long-term effects taking into account future climate change projections, and should also consider cumulative effects with other proposals. If no effects are expected it would be sufficient to state in the ES that this has been considered with a brief note of the methodology employed.

RSPB Scotland would wish to see details of the full carbon balance budget for the proposed development detailed in the ES. This may include, for example, the amount of carbon required for equipment manufacturing and any CO2 which may leak from the seabed.

Design, Landscape and the Built Environment

In the scoping report, the Landscape, Seascape and Visual Assessment is structured into sections (a 'General Description', 'Available Data', 'Method of Assessment', 'Potential Mitigation and Monitoring', and 'Cumulative Effects') but the presentation of thought and process within is unclear. For example, some elements of methodology have been inserted into 'General Description'. The Landscape, Seascape and Visual Assessment will need to be well structured, with the range of significant issues that are relevant or not, clearly stated. SNH recommend that this section of the scoping report is restructured and clarified if the ensuing Environmental Statement is to be clearly and cogently presented. SNH is in the process of issuing and compiling additional guidance and information.

Guidance on Siting and Designing Windfarms in the Landscape has recently been published. Although this guidance has been developed to inform onshore development, some aspects may also be relevant to consider in respect of offshore proposals. SNH is giving current consideration to marine renewables, with the intention of issuing advice early in 2010. SNH encourage the use of this guidance within the EIA process, and are endeavouring to make it available as soon as possible.

SNH note that the approach to the Cumulative Seascape, Landscape and Visual Impact Assessment of the Forth and Tay proposals is of high importance. It is understood from The Crown Estates that a collaborative approach for these developments is being progressed. The discussion document 'East Coast Discussion Document – Cumulative Impacts' (Royal Haskoning, September 2009) outlines some of the issues, and the Neart na Gaoithe developers are party to this process. The relationship between this collaborative discussion document and what has been proposed in the Neart Na Gaoithe scoping report (both for individual site assessment and for cumulative assessment) is not clear. Chartered Landscape Architects, preferably a team of two, should carry out the landscape and visual impact assessment.

East Lothian Council notes that, in paragraph 6.1.1., the Scoping Report states that as the proposed distance is greater than 15km the effects of any windfarm on the coastal landscape are likely to be limited. For onshore windfarms, it is usual to examine effects up to at least 30 km. Although the likelihood of significant effects diminishes with distance from the windfarm, a significant effect even at that distance is not altogether ruled out. As these wind turbines will be considerably larger than those currently seen onshore, it should not be assumed that effects on the coastal landscape are likely to be limited. This is especially the case as views of the sea are often perceived, in contrast with the landscape, as being essentially wild, natural and unchanged and valued for that reason. The developer states that long distance views may be obtained in clear weather conditions from East Lothian, but that no significant effects are expected. Due to the nature of the change (from a sea view with very little – if any – development to a view with development) lack of significant effects cannot be assumed and assessment of longer distance views should be included.

The Scoping Report notes that climatic and atmospheric conditions will be included in the visual assessment. This should include an assessment of how this interacts with visual receptors for example walkers may be more likely to be out on a clear day. Area of Great Landscape Value designation covers parts of the East Lothian coastline also.

Landscape and Visual Impact Assessment [LVIA] Viewpoints:

The LVIA should include as viewpoints key receptor areas in East Lothian. Viewpoints from both Dunbar and North Berwick both of which attract a considerable number of tourists and are areas with increasing residential populations should be included. The viewpoint at North Berwick could be from the summit of North Berwick Law, which is a very popular viewpoint with views across the Firth of Forth and North Sea.

Consideration should be given to the inclusion of views from other areas of high ground in East Lothian, e.g. Doon Hill Scheduled Ancient Monument, and the road at West Steel where there are good views over the Firth of Forth in context with windfarms in this area. Sequential views from the John Muir Way could also be considered.

Cumulative Impact with Onshore – Windfarms:

Cumulative impacts should take account of established and proposed windfarms on shore and the views from the coastal areas. This could include the proposed wind turbines at Skateraw, Drone Hill, and possibly Aikengall and Crystal Rig

Visual Impacts from the Sea:

Consideration should be given to potential visual impacts from the sea, for example the Rosyth to Europe Ferry Route is an important ferry gateway to Scotland from Europe and visual impact from selected viewpoints points along the route should be considered.

Requirement for a Strong Windfarm Design Rationale:

The location of the turbines should be based on a strong design rationale. Although the siting of turbines in relation to operational requirements such as wind direction, turbine spacing and navigation requirements is obviously important, this location is a major sea and ferry gateway into Scotland from Europe. A strong visual design concept so that the windfarm makes a positive

visual impact for visitors arriving in Scotland by sea is important. A bold geometric layout of turbines may well be appropriate.

Onshore Facilities and Infrastructure – Landscape and Visual Impact:

It is likely that that electricity generated by the proposed windfarm will come ashore at either Torness or Crockenbie where there exists power stations and access to the National Grid.

The landscape and visual impact of the proposed sub-sea to shore, cable route needs to be considered on coastline and hinterland. This should include associated infrastructure such as, sub-stations, buildings and pylons, design, screening, mitigation and reinstatement measures.

Consideration should also be given to the possibility of other offshore wind farms connecting to the sub-sea electricity cable and also coming ashore at Torness or Crockenbie.

Shore based electrical infrastructure should be capable of expansion to accept electricity generated by other offshore windfarms and the design, visual and landscape considerations of this should be taken into account.

It is understood that a Ports Study is also being undertaken for supply bases to service the off shore windfarms. If this is included as part of the application the land use and the landscape/ visual implications of this should be considered.

Fife Council would welcome further opportunity to comment on the selection of views of the proposal site from points within East Fife at a later stage. Obviously prominent views from points within St Andrews need to be considered as well as points in the Fife Ness Area as well as higher points within Fife where cumulative issues with onsite installations may be relevant. In this context consideration also needs to be had to the impact on the Isle of May SSSI from a visual perspective as well as ecological.

The Royal Yachting Association has a recently revised position paper which provides guidance for minimising adverse effects of wind turbines and wind farms on navigation and this document should be consulted during the preparation of the Environmental Statement. Significant numbers of cruising vessels come to the East coast of Scotland both from England and from Continental Europe.

Construction

Fife Council recommend that Any chapter relating to construction and maintenance base site selection must refer to the Port of Methil and Burntisland as options.

East Lothian Council note that the potential for the creation of jobs should be considered.

SNH recommend that proposed construction methods will need to be detailed in the ES. The developer should include information on project management – contractor arrangements, 'chain of command' and roles and responsibilities of key staff – and timetabling – the phasing / sequencing of proposed works – especially if you have identified this as a mitigation measure for environmental, navigational or other effects. You should provide information on the construction equipment to be used, and your intended delivery routes and port facilities.

Royal Yachting Association state that any temporary exclusion zones during construction should conform to normal safety zone regulations and be lifted as soon as construction is completed.

Scottish Canoe Association (SCA) note that sea kayakers usually follow the coastline and coastal developments that introduce new artificial headlands create a danger to the passage of small craft. The SCA would therefore like to flag up their concern about the eventual landfall facilities where cables from offshore windfarms are brought ashore. If this is likely to be an issue the SCA would welcome the opportunity to take part in any consultation. Groups of sea kayakers occasionally make the open crossing to the Bell Rock. The usual starting point for such a trip is Fife Ness, although it is possible to set off from other points such as Arbroath or Broughty Ferry. Any development in the sea area in the Outer Firth of Tay, especially during the construction phase could impact on groups of kayakers making this journey. The SCA would therefore welcome being kept updated on construction activity in that area.

Mammals and Seabirds

RSPB welcome the proposal in the Scoping Report that baseline studies will give particular emphasis to gathering detailed information on the SPA qualifying species that occur within the development site. However, those listed in the scoping report are largely seabird species and RSPB consider it is important that passage species including waders, geese and ducks are not prematurely excluded from the assessments, in advance of the survey work being undertaken.

Archaeology and Cultural Heritage

General Principles

National Policy for the Historic Environment is set out in:

- Scottish Planning Policy (SPP) 23 *Planning and the Historic Environment* at: <http://www.scotland.gov.uk/Publications/2008/10/28135841/0>
- The Scottish Historic Environment Policy (SHEP) sets out Scottish Ministers strategic policies for the historic environment and can be found at: <http://www.historic-scotland.gov.uk/index/heritage/policy/shep.htm>
- Technical Guidance Note * text available at: <http://www.historic-scotland.gov.uk/index/heritage/policy/memorandumofguidance.htm>

Amongst other things, SPP 23 stresses that scheduled monuments should be preserved *in situ* and within an appropriate setting and confirms that developments must be managed carefully to preserve listed buildings and their settings to retain and enhance any features of special architectural or historic interest which they possess. Consequently, both direct impacts on the resource itself and indirect impact on its setting must be addressed in any Environmental Impact Assessment (EIA) undertaken for this proposed development.

The comments in this response relate to Historic Scotland's statutory remit as advisors to the Ministers on those aspects of the historic environment considered nationally important. Historic Scotland have checked the submitted information in relation to our historic environment interests at the national level, that is:

- scheduled monuments and their settings
- category A listed buildings and their settings
- gardens and designed landscapes appearing in the Inventory
- designated wreck sites (Protection of Wrecks Act 1973)

Information on the location of all scheduled monuments, listed buildings, gardens and designed landscapes and designated wreck sites can be obtained from www.PASTMAP.org.uk This is a free, interactive website produced jointly by Historic Scotland and the Royal Commission on the Ancient and Historical Monuments of Scotland which allows anyone with internet access to display and search data on Scotland's historic environment.

The scoping assessment below relates to the potential impacts of the offshore aspects of the scheme only (turbines and offshore cabling) in relation to both the marine and terrestrial assets of national importance. It is noted that the location of the proposed onshore infrastructure, for example, in relation to cabling and substations etc, has not been assessed within this scoping report. It is understood this shall be assessed within a separate ES (Environmental Statement) and as such, shall be subject to a separate consultation.

Marine Assets - Potential Direct Impacts

In relation to the search area of the proposed offshore wind farm and indicative offshore cabling locations, Historic Scotland can confirm that there are no designations of national importance within these identified areas.

As identified within the Scoping Report, the wreck sites of the K4 and K17 submarines are within the study area, which are designated as Protected Places under the Protection of Military Remains Act 1986. The Ministry of Defence has jurisdiction in respect of these submarines.

In addition to these designations within the search area, the Scoping Report identifies that there are also undesignated wrecks. It is strongly recommended that the impact on these be assessed within the ES, with appropriate involvement of archaeological expertise and in consultation with the Council Archaeological Service.

This assessment should consider the significance of potential impacts that might be caused by elements of the development on any archaeological features, such as:

- direct impacts to marine historic assets within and beyond the proposed development site which could result from permanent or temporary mooring installation, or the construction of support structures, slipways, and piers.
- indirect impacts to historic assets on the seabed or at the coast edge within the proposed development area and possibly beyond which may be caused by alteration to tidal currents and sedimentary regimes, and by changes to the chemical balance of the water and seabed sediments.

You may wish to seek specific advice on the treatment of cultural heritage in the marine environment in The Joint Nautical Archaeology Policy Committee (JNAPC) *Code of Practice for Seabed Development*. This can be found at: http://www.thecrownstate.co.uk/jnapc_code_of_practice_2

Marine Assets - Impact on Setting

In relation to the search area of the proposed offshore wind farm and indicative offshore cabling locations, Historic Scotland can confirm that there are no designations of national importance within the immediate vicinity of the proposed scheme.

Terrestrial Assets - Potential Direct Impacts

In relation to the search area of the proposed offshore wind farm and indicative offshore cabling locations, Historic Scotland can confirm that there are no designations of national importance within these identified areas.

Terrestrial Assets - Impact on Setting

In relation to the search area of the proposed offshore wind farm and indicative offshore cabling locations, Historic Scotland can confirm that there are numerous terrestrial assets with a seascape setting, which maybe subject to an

indirect impact as a result of the proposed offshore turbines. These locations are listed below:

Scheduled Monuments

- Tentsmuir Coastal defences (Index no. 9712);
- Crail Airfield, airfield 1km E of Kirklands Farm (Index no. 6642);
- St Andrews Castle (Index no. 90259);
- St Andrews Cathedral and adjacent ecclesiastical remains (Index no. 90260);
- Crail Airfield, pillbox, Foreland Head (Index no. 6461);
- Crail Airfield, airfield 1km E of Kirklands Farm (Index no. 6642);
- Isle of May, lighthouse (Index no. 887);
- Isle of May Priory (Index no. 883).

Category A Listed Buildings

- St Andrews Harbour (HB no. 40596);
- Bell Rock Lighthouse (HB no. 45197).

Gardens and Designed Landscapes

- St Andrews Links;
- Cambo.

The proposed viewpoint locations for wireframe / photomontage assessment as indicated within chapter 6 of the Scoping Report are considered acceptable, however, Historic Scotland would also request that a viewpoint be taken from Tentsmuir Coastal defences (Index no. 9712) and Crail Airfield (Index no. 6642). The viewpoint at Crail Airfield would be best taken from the control tower, as this is the viewpoint from where sight of the airfield and beyond was required during functioning of the site.

Cumulative Impact

In terms of cumulative impact on terrestrial / coastal assets, the Scoping report proposes four cumulative wireline locations: Fife Ness, Isle of May, Anstruther and Dunbar / St Abb's Head. It is recommended that two additional viewpoints also be included; a viewpoint from St Andrews and Tentsmuir, which would take into account the fact that the Bell Rock and Inch Cape offshore sites are located to the north of Neart Na Gaoithe.

Views on the Principle of this Proposal

On the basis of the information supplied, Historic Scotland are content with the principle of the proposal. It is not considered that there shall be significant detrimental impacts on marine assets of national importance. Although it is considered likely that there will be impacts on the setting of terrestrial assets of national importance, at this stage we would consider there to be limited potential for these impacts to be significant. Historic Scotland shall of course need to see the full Environmental Statement (ES) for us to give a final view on the proposed development, and thoroughly examine the cultural heritage assessment.

In terms of assessing marine archaeology, the proposed methodology for baseline surveys, assessment of impacts and mitigation/monitoring is thorough and this approach is welcomed. The proposed sources and archives is also appropriate.

With reference to the proposed production of a Written Scheme of Investigation (WSI), Historic Scotland would welcome this approach, however, would recommend that reference to this being 'subject to the approval of Historic Scotland's Senior Inspector of Marine Archaeology...' be removed and perhaps replaced with a reference to the WSI being compiled following discussion / consultation with Historic Scotland's Senior Inspector of Marine Archaeology. Historic Scotland would not be in a position to formally approve such a document, however, would of course wish to be part of any consultation and would provide advice / guidance in relation to best practice. Historic Scotland welcome the production of protocols for unexpected discoveries before the start of scheme operations.

In terms of assessing the impact of the offshore elements of the proposal on terrestrial assets, Historic Scotland consider the proposed methodology acceptable. The indicative viewpoints identified within the Scoping Report are accepted and the inclusion of certain additional viewpoints are also recommended, as identified above. Any ES to be produced for this development should consider impacts upon these assets. We would expect this assessment to contain a full appreciation of the setting of these heritage assets and the likely impacts on those settings.

The relevant Council Archaeological Service will be able to provide information and advice on sites of regional and local importance, such as unscheduled or unrecorded archaeology.

Historic Scotland would be particularly keen to view the proposed site layout, photomontages and ZTV's, once finalised.

It is strongly recommended that the developer refers to the advice contained in our setting annex at:
http://www.historic-scotland.gov.uk/scoping_of_development_proposals_2009.pdf.

Historic Scotland also advise that the developer refers to information contained within the technical guidance note on setting. This is currently out for public consultation and is available at:
<http://www.historic-scotland.gov.uk/index/about/consultations/currentconsultations.htm>

Navigation

The Environmental Statement should supply detail on the possible the impact on navigational issues for both Commerical and Recreational craft, viz.

Collision Risk

Navigational Safety

Risk Management and Emergency response

Marking and lighting of Tidal Site and information to mariners

Effect on small craft navigational and communication equipment

Weather and risk to recreational craft which lose power and are drifting in adverse conditions

Evaluation of likely squeeze of small craft into routes of larger commercial vessels.

Visual intrusion and noise

Fife Council believe that consideration should be made with regard to the potential impact on the operational fishing fleets from the East Neuk ports, particularly Pittenweem, which historically have fished around the Wee Bankie and may be impacted by the development, as no reference appears to be made to the East Neuk fishing industry in the scoping opinion.

Also Anstruther harbour in particular, and Tayport harbour have in recent years developed as leisure sailing ports with pontoons and other onshore facilities geared to sailing activities. Other East Neuk ports such as Elie are also popular sailing bases.

In terms of shipping routes impact on the Port of Rosyth in terms of possible future development of European routes should also be considered as this is a strategic consideration for Scotland and Fife.

All these issues are very important for Royal Yachting Association and indeed for other seafarers. Marking and lighting is considered very important and the IALA guidelines (http://site.ialathree.org/pages/publications/documentspdf/doc_225_eng.pdf) which are followed by the Northern Lighthouse Board. It will be important to simulate the appearance of lights marking turbines and wind farms at night from a range of directions and distances as there is a concern that there may be too many lights which, combined with those on shore, may increase confusion from sea level. For example, apparently overlapping North and South cardinal marks on adjacent farms may lead to difficulty in identification.

Moreover, the effect of the wind farm on the visibility of the lights from the Bell Rock and May lighthouses at night should be investigated, particularly as the helmsman on recreational vessels will be close to sea level. As the edge of the farm is porous, it may be difficult, particularly in fog or even at night, to identify which unit has been encountered, and consequently whether the vessel should turn port or starboard to clear the hazardous area. By no means all recreational

vessels are equipped with chart plotters. The IALA regs may not provide adequate guidance. There are mitigation actions that could be taken including the mounting of AIS units on some turbines along with large identification numbers and short range lights. Consideration should be given to the mechanism for notifying the position of turbines, windfarms and any advisory routes through the wind farm to the UK Hydrographic Office. The effect of the array on wind turbines on the windfield experienced by a sailing vessel should be explored. The RYA through RYA Scotland will be happy to discuss these issues with the writers of the Environmental Statement and with NLB.

The RYA Coastal atlas referred to in the text is kept under continual revision. Routes may change with the installation of windfarms for both negative (impediment to navigation, perception of risk) and positive (navigational aids) reasons.

Marine and Coastguard Agency (MCGA) recommend that Navigational Risk Assessment is submitted in accordance with MGN 371 (and 372) and the DTI/DfT/MCA Methodology for Assessing Windfarms.

Particular attention should be paid to Cabling routes and burial depth and subject to the traffic volumes an anchor penetration study may be necessary

Reference should be made to the MEHRAS established at Bass Rock, Dunbar and The Isle of May and adjacent costlines.

The cumulative and in combination effects require serious consideration and MCGA welcome the establishment of the the Forth & Tay Development Group to collectively address these issues

MCGA are concerned that neither Navigation or Commercial Fishing subject areas were chosen for further development within the Appendices section which appear to only reflect the Site Selection Constraints identified in Table 1.1

Developers need to be aware that the radar effects of offshore wind farms on ship's radars are an important issue and subject to further discussion within the radar sub group of NOREL The radar effects will need to be assessed on a site specific basis taking into consideration previous reports on the subject available on the MCA website at: http://www.mcga.gov.uk/c4mca/mcga07-home/shipsandcargoes/mcga-shipsregsandguidance/mcga-windfarms/offshore-renewable_energy_installations.htm

Marine Scotland also maintain that guidance contained in Maritime and Coastguard Agency Marine Guidance note 371 should be followed.

Chamber of Shipping state that navigation safety is of paramount importance when considering the development of a wind farm. All the guidance documents should be applied carefully whilst preparing the report and in consultation with the Chamber of Shipping.

The report clearly addresses the key Navigation issues and they are included here for ensuring that they are comprehensively addressed in the full assessment.

As previously mentioned, the sites were originally determined from the distribution of shipping density data, in areas where relative shipping densities were low. The navigation assessment will refine this by using Automatic Identification System (AIS) and radar data for the area to identify the exact routes of vessels, the types of vessels, and the timings (e.g. whether there are more vessels seen in the area during high tide, or how long transit times are and therefore how long a specific vessel would be affected by the proposed wind farm).

Chamber of Shipping recommend that the traffic survey should incorporate AIS and radar data covering at least 28 days in the 12 months before submission (or adjusted according to MGN371), over more than one occasion. This will help define:

- Distance from shipping route as identified from the AIS data (application of MCA shipping template);
- Type of traffic using the proposed area/surrounding area;
- Non - transit uses of the area e.g. fishing, diving, recreation;
- Prescribed routeing schemes or precautionary areas;
- Proximity of the zone to areas used for anchorage, safe haven, port approaches and pilot boarding or landing areas;
- Proximity of the zone to offshore firing/bombing ranges and areas used for any maritime military purposes;
- Proximity of the zone to existing or proposed OREIs, offshore oil/gas platform and marine aggregate dredging, marine archaeological sites or wrecks, or other exploration/ exploitation sites;
- Proximity of the zone relative to any designated areas for the disposal of dredging spoil;
- Proximity of the zone to aids to navigation and/or Vessel Traffic Services (VTS) in or adjacent to the area and any impacts thereon;
- Assessment of where the existing traffic could be displaced to and whether there is potential for choke points/conflicts to be created.

Effects on navigation of auxiliary OREI structures

This will describe:

- The implication of tidal regimes in and around the proposed zone;
- Whether current maritime traffic flows and operations in general area are affected by the depth of water;
- The set and rate of the tidal stream, at any state of the tide;
- Whether engine failure or other circumstance could cause vessels to be set into danger by the tidal stream;
- The implication of adverse weather conditions in and around the proposed zone;

- Whether the zone in bad weather restricted visibility conditions could present difficulties or dangers to craft including sailing vessels.

Visual navigation and collision avoidance

An assessment will study whether:

- Structures could block or hinder the view of other vessels under way on any route;
- Structures could block or hinder the view of the coastline.

Communication, radar and positioning systems

The following will be identified:

- Potential for the structures to produce radar reflections, blind spots, shadow areas or adverse effects;
- Potential for communications to be adversely affected;
- Whether sound signals could be masked by the structures.

Emergency response

This will consider whether there would be potential navigational or communication difficulties caused to any mariners or emergency services using the area.

Cable routes

The study should also consider the potential effect of the cable route on navigation or maritime structures. As part of the impact assessment, a Navigational Risk Assessment will be undertaken. This will make certain assumptions as the final details of the project and construction schedule will not be known pre - consent. It will follow the BERR guidance for navigational risk assessments (DTI 2005b, Guidance on the assessment of the impact of offshore wind farms: Methodology for assessing the marine navigational safety risks of offshore wind farms).

Further Requirements

A radar and AIS survey will be required. This should cover 28 days and be collected within 12 months of the application.

In addition, there will be regular consultation with the Northern Lighthouse Board, the MCA and local ports to keep them informed of progress and enable appropriate feedback.

Northern Lighthouse Board (NLB) assume that any formal recommendations for lighting and marking will be given through the Coast Protection Act 1949 – Section 34 process.

Under the Merchant Shipping Act 1995 (sections 193 and 198), the Northern Lighthouse Board has the duty of superintendence over all Aids to Navigation (AtoN) within its area of jurisdiction. To this end the NLB work in partnership with all authorities to provide a seamless interface between their own statutory and third party maintained Aids to Navigation, for the safety of the mariner.

NLB would therefore welcome any early opportunity to meet with the developers and the Harbour Authorities to discuss the navigational impact and any required marking.

As part of the formal application the NLB would require that a full Navigational Risk Assessment is undertaken, which should include procedures to be taken and navigational warnings to be broadcast during the data gathering, surveying, installation and cable laying/trenching operations etc. Any vessels engaged in these works shall exhibit signals in accordance with the International Regulations for Preventing Collisions at Sea 1972 (COLREGS).

The Statutory Sanction of the Commissioners of Northern Lighthouses must be sought to deploy, exhibit and subsequently remove any proposed navigational lighting or buoy stations required within any conditions of the consent to establish the offshore Windfarm or for any preparatory work.

Aviation

In the wake of recent consultation with the aviation organisations such as NATS, BAA, CAA, MOD etc, it is clear that wind farm proposals can impact significantly on primary, secondary or weather radar stations and thus affect operational safety. Developers are encouraged to engage with these organisations and airport operators at an early stage in the design process, to establish the potential impacts and agree acceptable technical solutions. Where actual or potential conflicts exist, it is important that a solution is identified and that the relevant consultee agrees to that solution being realised within a suitable timescale.

A link to relevant aviation guidance is available at the following website link, however it should be note that this guidance is being reviewed;
<http://www.berr.gov.uk/files/file17828.pdf>

NATS En Route Plc (“NERL”) is responsible for the safe and expeditious movement in the en-route phase of flight for aircraft operating in controlled airspace in the UK. To undertake this responsibility NERL has a comprehensive infrastructure of radars, communication systems and navigational aids throughout the UK, all of which could be compromised by the establishment of a wind farm. In this respect NERL is responsible for safeguarding this infrastructure to ensure its integrity to provide the required services to Air Traffic Control (ATC). In order to discharge this responsibility NERL assess the potential impact of every wind farm development in the UK which have applied for planning approval.

NERL offer services to assist in pre-planning for wind farm developments. Details of these services are available on <http://www.bwea.com/aviation/nats.html> or by contacting NERL directly on NATSSafeguarding@nats.co.uk or writing to:

NERL Safeguarding – Mailbox 27
NATS - CTC
4000 Parkway
Solent Business Park
Whiteley
Hampshire
PO15 7FL

NATS are unable to evaluate the proposal until the ground to blade tip height and OS Grid Reference for each individual wind turbine (eastings and northings) is received.

The Wind Energy Team at Defence Estates is the focal point for all wind farm proposals in MOD. The team seeks to work with industry at the earliest stages of proposed development to minimise the impact on Defence, to ensure public safety is not compromised, and maximise the likelihood of planning success. Each pre-planning proposal is assessed on a case by case basis by up to 10 technical advisors. Some of the main concerns the MOD has are interference with Air Defence Radar and Air Traffic Control Radar, plus the creation of

obstacles in Low Flying Areas, which negate the usefulness of the training undertaken there. Aviation safety lighting should also be considered through consultation with the aviation authorities and the relevant planning authority.

The pre-planning consultation form traditionally found at annex E of the Wind Energy and Aviation Interests – Interim Guidelines should be completed and e-mailed to Defence Estates at modwindsystems@de.mod.uk

Civil Aviation Authority Directorate of Airspace Policy (DAP) is the civil aviation regulatory focal point for all wind farm proposals. DAP seeks to work with industry at the earliest stages of proposed development to establish potential civil aviation issues associated with any particular wind turbine proposal. The best means by which to initiate the aviation related consultation process is via the **completion and submission of an associated aviation pre-planning proforma** in line with the process described within the DTI/BERR guidance document 'Wind Energy and Aviation Interests – Interim Guidelines'. Generic CAA policy and guidance on wind turbines is set out within Civil Air Publication 764, available at <http://www.caa.co.uk/docs/33/Cap764.pdf>.

Furthermore, developers should demonstrate that a solution to potential aviation issues is either agreed or well advanced, **prior to** submission of the application.

Consultation by the developer at the scoping stage has identified the following concerns for Defence Estates:

Air Traffic Control (ATC) radar

The turbines will be 40.1 km (to field centre) from; in line of sight to; and will cause unacceptable interference to the ATC radar at RAF Leuchars. Following trials carried out in 2005, it has been concluded that wind turbines can affect the probability of detection of aircraft flying over or in the vicinity of wind turbines. Due to this, the RAF would be unable to provide a full Air Traffic Radar service in the area of the proposed wind farm.

It has been shown that where Line Of Sight (LOS) to Primary Surveillance Radar (PSR) exists, the wind-turbines will appear as genuine aircraft targets and will mask aircraft responses. The radar may also be desensitised by its clutter processing within the sector containing wind turbines meaning that aircraft may disappear from radar. Shadowing of aircraft at similar radar to target elevation angles as the wind turbines may also occur, further degrading radar performance.

Precision Approach Radar (PAR)

The turbines will be 34.2km (to closest turbine) from; in line of sight to; and will cause unacceptable interference to the PAR at RAF Leuchars. In late 2008, the PAR at RAF Lossiemouth was repositioned to observe targets of opportunity over the Rothes wind farm. This has shown that wind turbines affect the detection of aircraft by the PAR. Due to this, the RAF would be unable to provide a full air traffic service in the area of the proposed wind farm.

Wind turbines in LOS to Precision Approach Radar (PAR) have been shown to have a serious affect on radar. Observations have shown that the larger radar-

reflections caused by turbines can seriously degrade the tracking performance of the radar, leading to loss of aircraft contact and ATC personnel terminating the service.

Currently, the MOD is not aware of any acceptable technical mitigation for the interference that will be caused to the PAR by your wind farm proposal. The MOD is currently working towards a full trial to better understand the effects of wind turbines on the PAR. The unclassified results of these trials will be provided to the wind energy industry.

Offshore Defence Interests

The offshore development area identified for the wind farm is located in an area containing MOD navigational interests directly supporting national defence. The proposed development may therefore affect these interests. Accordingly the applicant should take full account of the need to identify and address this issue. Details of these defence interests are not available in the public domain. However, the MOD will work with the developer as these scheme progresses to identify measures to address any siting and design issues as may be necessary.

Defence Estates are currently awaiting a response from their Air Defence technical advisors to confirm whether this proposal would be an issue to them. Once we have received their assessment we will forward this information accordingly.

If the developer is able to overcome the issues stated above, the MOD will request that the turbines are fitted with aviation lighting.

Accordingly the applicant should take account of MOD aviation and radar operations in completing the EIA particularly in identifying a suitable site for development and the dimensions of the turbines that are to be installed.

It should be noted that this response is based on current levels of wind farm development in the area. If additional wind farms are consented or built prior to this development being submitted for planning consent, our position may change.

Defence Estates Safeguarding wishes to be consulted and notified of the progression of licensing applications and submissions relating to this proposal to verify that it will not adversely affect defence interests.

9. Ecology, Biodiversity and Nature Conservation

Designated sites

The Scoping Report lists areas that are designated for their natural heritage interest. East Lothian Council recommends that the list should include the Firth of Forth as a Ramsar site.

SNH state that Ramsar sites are designated under the Convention of Wetlands of International Importance¹⁵. The mission of the Convention is “the conservation and wise use of wetlands by national action and international cooperation as a means to achieving sustainable development throughout the world”.

More information about Ramsar and a list of the current sites in Scotland are available from JNCC’s website. All Ramsar sites in Scotland are also Natura sites (see previous section), and many are also Sites of Special Scientific Interest. So although there is no specific legal framework that safeguards Scottish Ramsar sites, they benefit from the measures required to protect and enhance the Natura sites and SSSIs which overlap them.

The Report includes wide SPA list with which RSPB agree. However, it omits sites designated for the migratory goose populations including the Upper Solway Flats and Marshes SPA and Slamannan Plateau SPA. The list of sites, as with species, should be wide at this stage and can be reduced as data gathered indicates the key SPA species likely to be affected.

There may be particular issues for SPA-qualifying migratory waterfowl, either moving up and down the east coast of Britain, or across the North Sea (e.g. the Waddenzee). The SPA network functions at multiple spatial scales, according to dispersal and migration flight distance. In order to address this, it may be worth appending a list of SPAs elsewhere (UK or North Sea) used by waterfowl qualifying species for the SPAs within the proposed study area. It is most important that the methodology and results of the survey work are in a form which allow appropriate assessments under the Habitats Directive to be undertaken, as they will probably be required.

The ES should take account of possible future marine SPAs, for which JNCC is currently preparing advice for SNH and the Scottish Government. In relation to sites that “should be” SPAs, a “shadow” appropriate assessment may be the safest way forward.

Habitats

SNH is the statutory nature conservation body who provides advice on EPS in respect of the Habitats Regulations in Scotland (including Scottish Territorial Waters). Please see their website for the full list of EPS in Scotland and a summary of the legal provisions which apply under the Habitats Regulations. Scottish Government has also provided guidance on the 2007 amendments addressing EPS – Explanatory guidance for species related activities.

JNCC is the statutory nature conservation body who provides advice on EPS in the offshore zone – 12 to 200 nautical miles – where the Offshore Habitats Regulations apply. Please see their website for further advice on the legal provisions which apply under these Regulations.

EPS Licences

Licences may be given authorising activities that could affect EPS which would otherwise be illegal. For Scottish Territorial Waters these licences will be issued either by Scottish Government or by SNH depending on the reasons for the licence request. Licences are only issued under very strict conditions as set out in regulations 44 and 45 of the Habitats Regulations.

Scottish Government produced interim guidance for local authorities in 2001 on how to deal with planning proposals where EPS are present. This guidance is also relevant to other types of development and can be viewed on the Scottish Government website.

Habitats & Birds Directives, & Habitats Regulations

The two most influential pieces of European legislation relating to nature conservation are the Habitats and Birds Directives. The 'Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora' was adopted in 1992 and is commonly known as the Habitats Directive. It complements and amends the 1979 'Council Directive 79/409/EEC on the conservation of wild birds', commonly known as the Birds Directive.

The Birds Directive protects all wild birds, their nests, eggs and habitats within the European Community. It gives EU member states the power and responsibility to classify Special Protection Areas (SPAs) to protect birds which are rare or vulnerable in Europe as well as all migratory birds which are regular visitors.

The Habitats Directive builds on the Birds Directive by protecting natural habitats and other species of wild plants and animals. Together with the Birds Directive, it underpins a European network of protected areas known as Natura 2000. This network includes SPAs classified under the Birds Directive and Special Areas of Conservation (SACs) designated under the Habitats Directive.

The 1992 Habitats Directive complements and amends the 1979 Birds Directive. It was transposed into UK law by the 'Conservation (Natural Habitats, &c.) Regulations 1994' which came into force on 30 October 1994 – usually called simply the Habitats Regulations (to which further amendments have since been made). Since devolution, the Scottish Government has had responsibility for putting the Habitats Directive into practice in Scotland, and there have been several Scottish amendments to the Habitats Regulations since this time, notably in 2007 (see below).

As well as territory on land, Scottish Government responsibilities extend out to sea, to the limit of 'inshore' waters at 12 nautical miles off the coast. The Habitats Regulations apply to the inshore zone, and the rules for the protection of marine Natura sites and marine European protected species (EPS) apply here exactly as they do on land.

Beyond inshore waters, between 12 and 200 nautical miles, the Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 as amended apply (the Offshore Habitats Regulations). These differ from the Habitats Regulations mainly in respect of the provisions for EPS – please see Section 4vii of the SNH response for further discussion.

Habitats Regulations – 2007 Scottish Amendments

In Scotland, two key amendments were made to the Habitats Regulations in 2007:

- 2007 Amendment No.1 included updates to some of the rules affecting European protected species (see Section 4vii of the SNH response).
- And 2007 Amendment No.2 clarified that “all plans and projects” have to be assessed with regard to their potential effects on Natura sites. That is, a Habitats Regulations Appraisal is required for all plans or projects that could affect a Natura site.

Habitats Regulations Appraisal

Where a plan or project could affect a Natura site, the Habitats Regulations require the competent authority – the authority who has the power to undertake or grant consent, permission or other authorisation for the plan or project in question – to undertake a Habitats Regulations Appraisal (HRA). HRA applies to any plan or project which has the potential to affect a Natura site, no matter how far away from that site.

HRA refers to the whole process set out in regulation 48 of the Habitats Regulations, including appropriate assessment, if required.

Appropriate assessment is required when a plan or project affecting a Natura site:

- Is not connected with management of the site for nature conservation, and
- Is likely to have a significant effect on the site (either alone or in combination with other plans or projects).

The competent authority, with advice from Scottish Natural Heritage (SNH), decides whether appropriate assessment is necessary and carries it out if so. Appropriate assessment focuses exclusively on the qualifying interests of the Natura site affected and must consider any impacts on the conservation objectives of the site. The applicant is usually required to provide the information to inform the assessment. A plan or project can only be consented if it can be ascertained that it will not adversely affect the integrity of a Natura site (subject to regulation 49 considerations).

Further Information and Advice on HRA

Further information on the qualifying interests and the conservation objectives for each Natura 2000 site in Scotland is available from SNH’s Sitelink database. The conservation objectives documents include a list of all the qualifying habitats and/or species for each site.

SNH’s leaflet on “Natura sites and the Habitats Regulations” provides a helpful summary of the HRA process. Some of the key concepts are explained in the European Commission’s guidance on Article 6 of the Habitats Directive. Revised guidance updating the Scottish Office Circular 6/1995 on the implementation of the Habitats and Birds Directive in Scotland was produced in June 2000. This sets out current Government policy relating to Natura sites but is now due for further revision.

HRA for Offshore Windfarms in Scottish Territorial Waters

HRA for the ten proposed offshore windfarms in Scottish Territorial Waters has commenced concurrently with the SEA. This HRA is being carried out in order to ascertain whether these windfarm proposals, at a strategic plan level, will not adversely affect the integrity of a Natura site. Due to the level of information available about proposals at a strategic stage, in general an appraisal at this point will be less detailed than that carried out at a project level. However, it should identify the main issues to be considered, including potential cumulative effects, and come to a reasoned conclusion as to any adverse effects on the integrity of any Natura sites. At the project stage, information from the strategic level HRA can be used to inform a more detailed HRA.

SNH would like clearer information on the possible connections to the national grid and in particular on whether there is scope for connecting directly at Torness and whether or not the terrestrial cabling to near Innerwick is definitely required (this may have potential impacts on terrestrial habitats and European Protected Species).

Mussel beds are not a notified feature of the Firth of Forth SSSI.

RSPB Scotland state that the proposal has the capacity to affect benthic habitats that may be important for marine birds, including qualifying features of existing SPAs. More detail is given in the section on birds below, but it will be important in assessing potential SPA impacts to understand the associations between the distribution of seabird species and benthic habitats.

There may also be impacts on terrestrial habitats associated with cable routes to the mainland, as outlined in section 5.6. The report correctly identifies that there may be effects on designated sites, including the Firth of Forth SPA.

Species

The ES needs to show that the applicants have taken account of the relevant wildlife legislation and guidance namely, Coast Protection Act 1949 section 34, Council Directives on The Conservation of Natural Habitats and of Wild Flora and Fauna, and on Conservation of Wild Birds (commonly known as the Habitats and Birds Directives), the Wildlife & Countryside Act 1981, the Nature Conservation (Scotland) Act 2004, the Protection of Badgers Act 1992, the 1994 Conservation Regulations, Scottish Executive Interim Guidance on European Protected Species, Development Sites and the Planning System and the Scottish Biodiversity Strategy and associated Implementation Plans. In terms of the SG Interim Guidance, applicants must give serious consideration to/recognition of meeting the three fundamental tests set out in this Guidance. **It may be worthwhile for applicants to give consideration to this immediately after the completion of the scoping exercise.**

It needs to be categorically established which species are present on the site, and where, before the application is considered for consent. The presence of protected species such as Schedule 1 Birds or European Protected Species must be included and considered as part of the application process, not as an issue which can be considered at a later stage. Any consent given without due consideration to these species may breach European Directives with the possibility of consequential delays or the project being halted by the EC. Likewise the presence of species on Schedules 5 (animals) and 8 (plants) of the Wildlife & Countryside Act 1981 should be considered where there is a potential need for a licence under Section 16 of that Act.

SNH state that certain species are listed on Annex IV of the Habitats Directive as species of European Community interest and in need of strict protection. The protective measures required are outlined in Articles 12 to 16 of the Directive. The species listed on Annex IV whose natural range includes any area in the UK are called 'European protected species'.

Birds

Overall, SNH consider that the analysis of ornithological issues in the scoping report is excellent. The issues that may occur with this development have been thoroughly thought through at the appropriate level and are being driven by a combination of the biological system being monitored and (it appears) the requirements to do so. SNH's comments on ornithology are therefore relatively minor in nature.

SNH provide comments on the scoping report itself with reference to section 5.5 Ornithology, followed by our comments on Appendix E.

Section 5.5.1 General description – this section states that the boundaries of the St Abb's Head to Fast Castle SPA and Forth Islands SPA are in the process of being extended to 4km offshore from the coast. This is incorrect. The boundaries of both SPAs have now been extended seaward but this is by 1km in the case of St Abb's Head to Fast Castle SPA and 2km in the case of Forth Islands SPA. Regarding the assessment of "disturbance" there should be some assessment of the potential effects of post-construction Operation & Maintenance. It would be useful to know if the turbines will utilise any remote condition monitoring as this may affect the numbers and frequency of O&M visits.

Figure 5.5 – there is no explanation on how the figure of bird sensitivity was created. As a result it is unclear why certain areas have extreme sensitivity (such as off Tentsmuir Point) yet important feeding areas like the Wee Bankie ("known to be [a] favoured seabird feeding area", 5.5.1, 2nd paragraph) are only rated as of high sensitivity.

Section 5.5.3 Method of assessment – regarding the turbine foundations and cabling scour protection, an assessment of whether different types of scour protection may have an impact on the species composition of the fish species would be helpful. We have some concerns about rock scour protection changing the species composition away from important prey species for seabirds (particularly sandeels). This is also true of any potential reef effects from the turbine structures themselves (see the relevant section of 6bi – Benthic Ecology – above).

Also, it states in the last paragraph of this section that collision risk assessment will be carried out for kittiwake and gannet. It is an early stage in the process to be so specific and such assessment may be needed for a wider range of bird species (in particular, SPA qualifiers) that may be impacted by the development.

Section 5.5.5 Potential mitigation and monitoring – will the dedicated observers have the power to be effective in diverting boats away from rafts of moulting birds. What procedures will ensure this effectiveness and how will it be recorded?

Appendix E

Section E.2 Scope of bird and marine mammal surveys – we recommend the use of side scan sonar devices ('fish finders') in conjunction with the bird surveys as this may prove valuable understanding the reasons behind the spatial and temporal distributions of birds and may help assess potential indirect impacts from the proposed development. Can these data be collected in addition to bird survey data during the bird surveys? If so, how would the data be analysed, during which periods could these data be collected (e.g. every trip, targeted to specific times of year, only sufficiently to provide sufficient data for robust analysis).

Section E.3.1 Collision effects – could the use of specific lighting methods (baffles, coloured filters, strobes) be assessed in respect of their potential to reduce impacts on migrating birds?

Section E.3.2 Disturbance effects – it needs to be noted that the effects of displacement on energetics is variable and can be cumulative. The assessment of this potential impact needs to be carefully controlled and particular care has to be taken in assessing the different effects on migratory and breeding birds.

Also, the impact of noise, shockwaves and vibration on important prey species, in particular sandeels, needs to be very carefully assessed. This should include the level and duration of the disturbance caused the development and whether this may affect bird populations.

Section E.3.4 Indirect effects – SNH advise that that the indirect effects, both positive and negative, of the reef effects caused by both the turbine structures, scour protection and cabling. The indirect effect should include the potential of this reef effect to change the relative species composition of prey fish species.

Section E.3.6 Key issues – the reef effect should also be added to this list (see the relevant discussion in section 6bi – Benthic Ecology).

Section E.4.2.2 Auks – very minor point, what does “national” refer to in regards to populations? Is this the UK or Scotland?

Sections E.4.2.5 Sea duck & E.4.2.6 Divers and grebes – what does “small” mean regarding the numbers of these birds? Is this relatively or absolutely small? How small is small? SNH advise, in preference, that estimated numbers are provided (even if they are very rough at this stage).

Section E.4.2.7 Cormorant and shag – it would appear that there is some potential for shags to be attracted to the proposed site and therefore an assessment of the positive and negative impacts of this attraction would be needed.

Section E4.2.9 Terrestrial birds – SNH agree that this is a difficult area for analysis, however, it should be possible to make some assessment of the potential impacts. Examples of processes to determine impacts on terrestrial birds would be to determine how many days of the year that inclement weather conditions may bring birds into potentially negative interactions with the turbines, also use of Doppler weather radar may help to assess overall densities of migrant birds which combined with on the ground counts from appropriate locations (i.e. coastal sites during “fall” conditions) may help to assess the relative proportions of those species measured using Doppler radar.

Section E.5.1 Acquisition of existing survey information – we recommend adding WWT to this list with particular reference to migrant geese.

Section E.6 Survey strategy – SNH suspect that ESAS surveys will not collect enough data on terrestrial migrant birds to be useful, but it is encouraging to see that it will be collected anyway. Also, the use of telemetry tags on some terrestrial migrants (such as Svalbard barnacle geese and Slammanan Taiga bean geese) may be very valuable.

Section E.7.2 Survey design – while SNH are aware of the problems of the sampling methodology and the potential pseudo-replication issues there perhaps needs to be some consideration of the potential for systematic bias in such a sampling regime.

Always following the same route at the same time of day etc, could produce systematic bias due to tide, glare, time of day etc. This needs accounted for in the modelling procedures. This is also true of observer bias, so which observer collected which data should be recorded and any bias can be checked and if necessary compensated for.

Section E.7.7 Aerial surveys – SNH would ask that we are kept informed with progress on this matter and whether the developer does decide to undertake site specific aerial survey work, in addition to the work being carried out in relation to the Round 3 enabling actions

Aerial surveys can be a useful complement to boat based surveys – their relatively rapid data gathering ability can allow tidal effects on bird densities and distributions to be considered. Aerial surveys can cover a wider geographic area which can then be cross-checked against the data from boat-based surveys in order to improve analysis (proportions of species groups such as Auks can be estimated from the boat based surveys and then applied to interpretation of aerial survey images).

Section E.8 Data management – it is commendable that the developer is willing to add their data into the ESAS database. Could they also share the other survey data at some point in the future?

Section E.9.2.2 Predictive modelling and distribution maps – is this a definitive list of considered parameters? Several other parameters may be needed in the modelling, such as tidal state, weather conditions and ‘nuisance’ parameters such as time of day, observer, etc.

References – we note that the reference for Distance software has changed this year. We also advise that Percival 2003 is not a citable reference.

The location of all elements of onshore infrastructure will need to be considered in respect of potential impacts to bird species.

With particular reference to Section 5.6.5 (third paragraph), SNH note that where works involve the removal or disturbance of habitat suitable for nesting birds, for example hedgerows, scrub or trees, there would have to be an inspection to see if any nests were present. If nests were present then work would need to be postponed until the nesting season was over.

RSPB Scotland’s comments below are submitted without prejudice to future consideration of what is a developing field of work. The recognition in the Scoping Report of the iterative and staged nature of the assessment process is welcomed, as is the proposal for an Ecological Review Group to keep key parties updated and engaged with progress. RSPB Scotland agree with the statement on page 50 that:

Given the proximity of the development to European designated sites and the possibility that birds forming part of the qualifying interests of these sites could be adversely affected by the proposals, it is reasonable to assume that an appropriate assessment under the Habitats Regulations 1994 will be required.

RSPB Scotland believe that the scope of species, surveys, and survey and assessment methodologies are, at this stage, probably as close to comprehensive as they can be and that work can be focused and refined as data are collected. RSPB Scotland have some brief comments relating to the scope and emphasis of the Scoping Report.

The Environmental Statement should capture data which will inform appropriate assessments of impacts on the integrity of a number of seabird SPAs. Information will be required which will allow the seabird use of the windfarm site to be assessed in the context of the overall distribution and foraging behaviour of species from the scoped SPAs. In terms of site integrity, the boat and aerial surveys of the windfarm site may be limited use without this contextual information. Existing data sources such as ESAS will give limited SPA context. Information should be gathered, for example using telemetry techniques and data loggers with adequate samples of individuals of key species tagged to allow the construction of habitat association models.

RSPB Scotland believe a more sophisticated analysis may well be required in the ES than the simple buffering shown in figure 5.11 in the Scoping Report. Because of the close spatial relationship of this development, other Scottish Territorial Waters sites locally and Round 3 development sites, in particular the R3 Zone 2 site, collaboration between developers will be essential so as to ensure the necessary level of data-sharing to enable safe assessments of “in combination” effects on the SPAs concerned. It is reasonable to delay this work, as the Scoping Report indicates (E.7.8.2) until a year of data from the development site can focus it more clearly and a collaborative approach involving all the developers can be produced. A proper assessment of the linkages between birds’ utilisation of this site and their breeding SPAs will not be a quick process as data collection will be over a representative period, allowing for intra- and inter-annual variation.

The development site may well be on migration routes for some bird species across the North Sea. It is difficult at this stage to individually scope all the species likely to be affected. However, potential barrier effects and collision risks should be included in the assessment. Three goose populations, Svalbard barnacle geese, Taiga bean geese and light bellied brent geese are known to migrate down the Scottish east coast before coming ashore to their respective SPAs. These should be scoped in, with their SPAs (above) and reference made to ongoing radio tracking work by the Wildfowl and Wetlands Trust (WWT) on Barnacle Geese.

RSPB Scotland have addressed issues associated with cumulative impacts in our response to the East Coast – Cumulative Study Report (Ornithology) undertaken by AMEC on behalf of the Forth and Tay Offshore Wind Developers Group and enclose a copy of our response.

Ideally, RSPB Scotland would like to see the whole area of the Forth/Tay STW and the Round 3 Zone 2 site surveyed as a single unit and the environmental data combined for analysis. However, if this is not possible, the collaborative approach facilitated by the Crown Estate for the STW sites should be extended to include Round 3 Zone 2. It is important that data from individual projects are collected in a standard way so that they may be combined for cumulative assessment. An iterative approach to discussions with stakeholders on the survey data throughout the survey period, would be of considerable value.

Mammals

In respect of marine mammals SNH consider the scoping report to be thorough, although most of the detail is provided in Appendix E and it is recommended that more of this information is presented in the main text of the report. Below, SNH provide our comments on marine mammals with reference to section 5.3 – Marine Mammals and section 5.4 – Noise, followed by our comments on Appendix E.

Section 5.3 – Marine Mammals

Section 5.3.1 – the Isle of May is referred to in this section, but not that it is a SAC and that grey seal are a qualifying interest.

Section 5.3.3 – SNH suggest that there is a reference included to displacement in this section (in addition to Appendix E). And Bullet 3 should read “Potential effects on marine mammals through loss of prey” not simply cetaceans.

Section 5.3.4 – SNH recommend the use of static PAMS (i.e. T-PODs, C-PODs) during survey work for EIA, and these will also be useful for post-construction monitoring. The developer also needs to think about the analysis of existing seal tagging (telemetry) data and whether more of such work may be required. SNH think that this would benefit from a co-ordinated approach between the Firth of Forth offshore windfarm developers. (And SNH will also raise this with the Crown Estate to check whether they could commission this work as one of their enabling actions).

In respect of the second paragraph in this section, it will be necessary to consider activities that will lead to “deliberate or reckless disturbance”. (Also reference is made to Regulation 43 – which we note only applies to plants.) The developer will need to think about conservation objectives for the various relevant SACs, including those relating to the habitats and processes which support the qualifying interests – such as foraging grounds / sandeels. Although the developer has considered some impacts to other users (for example, fisheries) they have mainly mapped their areas of use. An assessment is needed of any changes to other uses – such as changes to vessel routes, changes in frequency / distribution of fishing activity – that may have indirect effects on marine mammals.

The location of all elements of onshore infrastructure will need to be considered in respect of potential impacts to mammals.

In section G1.1 (Appendix G) – the developer indicates that they plan to do a 200m search area for otters around proposed cable landing points. This may need to be extended if they decide to undertake any blasting or drilling at these landing points.

Further guidance in respect of otters is provided by SNH on their website.

Section G1.3 (Appendix G) – the Bat Roost Potential (BRP) surveys should be carried out on all trees affected by the route, not merely those to be felled. This may include trees which will receive some pruning and those at risk of damage through felling or construction operations.

Reptiles / Amphibians

The location of all elements of onshore infrastructure will need to be considered in respect of potential impacts to reptiles and amphibians. We note that if any survey work is required for great crested newt then licensed surveyors must be employed

Fish

Fisheries Research Services note that at present the proposal does not contain any consideration of migratory fish issues. The proposal is located on the East coast of Scotland in close proximity to the rivers Tay and Forth. Both of these rivers are important rivers for salmon and sea trout. The River Tay is an SAC for salmon. The proposed location is also potentially on a major migratory route for East coast salmon.

The developers will need to consider the potential impact of the proposal on the migration of salmon and sea trout, both in the vicinity of the proposal and to other east coast rivers. The proposal has the potential to affect fish through exclusion and avoidance associated with physical structures, noise and electromagnetic interference. The developer should collate available information on the routes and timing of salmon and sea trout migrations and combine this with information on noise, electromagnetic interference and physical exclusion from the proposal to assess risks to migratory fish.

If there is any doubt over potential impacts then the developer should identify an appropriate monitoring programme to assess impacts. In the first instance the developers may wish to consult Marine Scotland Science over the use of catch data as part of any monitoring effort. The developers may also be able to benefit from an assessment of previous monitoring programmes associated with offshore wind proposals such as Robin Rigg.

SNH recommend liaison with the South East Inshore Fisheries Group (contact Nick Main: SE-IFG coordinator) who could provide an indication of the level of fishing activity within the proposed windfarm site and surrounding areas in the Firth of Forth and therefore:

- (a) the importance of the fishery resources within this area, and
- (b) the likely extent of displacement of fishing activity to other areas – consideration of the likely consequences of displacing (and therefore concentrating) fishing effort to other areas should be included.

Note that many of the vessels in the inshore area are < 15m long so are not required to have satellite vessel monitoring systems (VMS). Also, many small-scale fishers are not members of industry associations – many of these are now represented on the IFGs so should be contacted through these.

The muddy substrate identified in the south and western corners of the proposed site may well contain prawns, *Nephrops norvegicus*, a resource exploited in the wider areas by inshore fishing vessels. The sandier and more gravelly substrates may well be subject to dredging for scallops and other bivalves. Other trawling, dredging and creeling are also likely to occur in the vicinities of the possible cable routes. Although we are not aware of any in the

immediate vicinity of the proposed site, it would be useful to learn if there is a squid fishery in the area, as some marine mammals may associate with squid aggregations (which they feed upon) & therefore provide an indication of potential interactions with the development.

Methods for quantitative survey of commercial species ought to be agreed with Marine Scotland Science, who conduct such surveys for stock assessments. Nephrops, for example, are surveyed using visual (underwater TV) surveys of burrow density. The survey technique described for mobile fauna (beam trawls) may not necessarily be appropriate for this species.

Spawning and nursery grounds are not geographically or temporally fixed, potentially moving according to the conditions of the substrate, seabed habitats, climate and hydrodynamic regimes. Marine Scotland Science should advise whether the data used is sufficiently recent to be indicative of the location of spawning and nursery grounds, and whether the additional survey methods proposed (2m beam trawl) are suitable.

Where there is overlap between the location of spawning events/nursery grounds and the vicinity of the development site, construction work should be timed to minimise impacts. For example, while spawning events may range over many months, spawning will often peak in a more restricted period. Provided appropriate steps were taken to minimise impacts, it seems unlikely that the Neart Na Gaoithe development alone would have a significant impact on spawning events or nursery grounds on the scale of the Scottish east coast (but this is difficult to evaluate without up to date information on all spawning/nursery areas). However, it will be necessary for the cumulative impacts to be assessed, not only with other offshore wind developments but in combination with other marine industries and activities.

There is potential for negative impacts on the physiology of fauna exposed to electrical currents, particularly elasmobranchs and demersal/pelagic fish with swim bladders.

Although scientific understanding of the impacts is incomplete, best practice is considered to involve burying of cables to minimise negative effects. The use of best practice should be demonstrated wherever possible. If surveys show up the regular presence of species susceptible to the effects of electricity, then these considerations become particularly pertinent.

The key points ASFB would make are as follows:

1. That the proposed developments are conducted in full consultation with the local District Salmon Fishery Boards (Tay and Forth). These hold various statutory powers and duties with regard to this proposal and in view of their statutory functions there is an obligation that they are involved in any aspects of the development which may affect salmon or sea trout. ASFB have copied their scoping response to David Summers and Patrick Fotheringham at the Tay and Forth respectively, and directed them to the developer's website.

2. ASFB would like to record their concerns that such developments will have considerable implications and these very often can be conducted without proper regard or understanding of the potential impacts on the fish species and their habitat. Such impacts could include:

Effects arising from construction

- Physiological and behavioural effects of underwater noise and vibration resulting from construction operations
- Direct effects on fish of water quality changes through suspension of sediment in the water column disturbed during construction
- Indirect effects of water quality changes through effects on food sources available to salmon and sea trout

Operational Effects

- Physiological and behavioural effects of underwater noise and vibration resulting from turbine operation
- Effects of magnetic fields in the vicinity of power cables lying on or beneath the sea bed
- Indirect effects on fish of permanent changes in habitat

ASFB would therefore ask that the local DSFBs identified above are consulted by the developers on potential impacts on fish and fisheries.

RSPB state that due to their value for birds and other fish species, it is important that potential impacts on sandeels and sprat are considered in the EIA.

Sub-tidal benthic ecology

SNH believe that the physical footprint of turbines and, potentially, cabling and other associated infrastructure offshore (including scour protection) will cause permanent loss of benthic habitat, however, this area of habitat loss is small relative to the total area of the proposed development site.

The nature of the post-development recovery of seabed between turbines and in adjacent areas will depend on the impact of the physical structures on the local hydrodynamic regime and associated erosion and deposition processes. However, assuming such effects can be sufficiently minimised to avoid a major habitat shift, if mobile fishing gear were excluded from the development site then

recovery of the substrate and associated fauna should be possible. This could potentially include unexploited breeding stocks of some commercial species, with any overspill of progeny contributing to fishable stocks outside the development area.

Any loss or damage to biogenic or geogenic reef features should be avoided where possible (for turbine sites and cable routes), because the habitats and organisms associated with these tend to:

- (a) support a particularly high diversity of organisms,
- (b) be more sensitive to physical disturbance,
- (c) take longer to recover from physical disturbance, and
- (d) play particularly important roles in the provision of ecosystem services (e.g. nursery habitats; spawning grounds; food production; nutrient cycling; sediment stabilisation).

The scoping report notes that *Sabellaria spinulosa* has been recorded near to (but not within) the proposed development site, but not whether these comprise reef-forming aggregations, which would then qualify as an Annex 1 habitat under the Habitats Directive. It should be clarified whether and where any such aggregations exist and an assessment made as to whether they are vulnerable to damage by the proposed development.

Rocky reefs may well be present along the cable routes, particularly at the shore-end. Other biogenic reef habitats which could potentially be present in the development area include (but are not limited to) maerl and horse mussel beds. The chosen route should seek to minimise contact with such features within other operational and environmental constraints.

In respect of reefs as an SAC qualifying interest, we note that this is the case for the Isle of May SAC – it is now fully designated, and no longer a candidate site as stated in Section 5.1.1 of the scoping report. In this section, it may also be relevant to consider reefs as a qualifying interest of the Berwickshire to North Northumberland Coast SAC.

The scoping report makes reference to sea pens at various points. Although not a protected species by legislation, sea pens have been identified as a UKBAP species and are listed by the OSPAR commission as 'threatened and/or declining in the North-East Atlantic'. Consequently, developments should avoid causing direct or indirect damage to sea pen species.

The scoping report also mentions scour protection several times. SNH would strongly advise that all cables should be buried if at all possible (minimises any EMF effects).

The amount of rock dumping, cable protection or any other type of additional material being put on the sea bed should be calculated and shown spatially where this is likely to occur and what habitats this coincides with.

Turbines & associated structures as artificial reefs The introduction of new hard structures can result in the formation of artificial reefs, potentially resulting in an increase in biodiversity for a particular area, particularly where the area was previously dominated by soft substrates. However, in such circumstances the introduction of hard substrate comprises a fundamental change in the community structure and ecology of that area of seabed and the water column above. When considered on the scale of the Scottish east coast, it is unlikely

that the Neart Na Gaoithe development alone would have a significant impact on the ecological functioning of soft sediment habitats. However, it will be necessary for the cumulative impacts to be assessed in conjunction with other offshore wind developments and other marine industries.

The use of rock armouring or other materials around the base of turbines can provide habitat for various organisms that either attach to hard surfaces or live within the gaps such structures provide. The use of rocks of a variety of sizes and irregular shapes results in greater variation in the micro-habitats that form, thus optimising the diversity of flora and fauna that such structures could support.

SEPA welcome the proposed phase one subtidal, coastal and intertidal surveys. It is important to include UK Biodiversity Action Plan (BAP) species in these surveys so that they are not omitted from any proposed mitigation measures. UK BAP species of particular importance within the Firth of Forth include:

- Sabellaria spinulosa reefs
- Horse mussels *Modiolus modiolus* beds
- Native Oysters (*Ostrea edulis*)
- Saltmarsh
- Sea grass beds

The full list of Priority UK BAP Species and Habitats can be found on <http://www.ukbap.org.uk/NewPriorityList.aspx>. It may be more useful to consult the Marine Lifetime Information Network (MarLIN) as well as National Biodiversity Network (NBN) as the quality of marine data differs for the locations of these features. Additionally MarLIN gives 'sensitivity' and 'recoverability' information for marine features (<http://www.marlin.ac.uk/>.) This latter information will help hone effective mitigation methods for these features that could stand this project as an example of good practice.

The ES should also provide clarification on protocols to be followed to ensure that no marine non-native species are introduced into this area either during the development of this project or during the operational phase of the wind farm.

RSPB think it is encouraging to see that changes to the local hydrodynamic regime following turbine installation will be included in the assessment of potential impacts (E5.1.3) as changes in benthic sediment composition and distribution is particularly relevant to species like sandeel, which are dependent on sediment for breeding.

10. Water Environment

Developers are strongly advised at an early stage to consult with SEPA as the regulatory body responsible for the implementation of the Controlled Activities Regulations (CAR), to identify 1) if a CAR license is necessary and 2) clarify the extent of the information required by SEPA to fully assess any license application.

All applications (including those made prior to 1 April 2006) made to Scottish Ministers for consent under section 36 of the Electricity Act 1989 to construct and operate a electricity generating scheme will require to comply with new legislation. In this regard we will be advised by the Scottish Environment Protection Agency (SEPA) as the regulatory body responsible for the implementation of the Water Environment (Controlled Activities) (Scotland) Regulations 2005, and will have regard to this advice in considering any consent under section 36 of the Electricity Act 1989.

SEPA produces a series of Pollution Prevention Guidelines, several of which should be usefully utilised in preparation of an ES and during development. These include SEPA's guidance note PPG6: Working at Construction and Demolition Sites, PPG5: Works in, near or liable to affect Watercourses, PPG2 Above ground storage tanks, and others, all of which are available on SEPA's website at <http://www.sepa.org.uk/guidance/ppg/index.htm>. SEPA would look to see specific principles contained within PPG notes to be incorporated within mitigation measures identified within the ES rather than general reference to adherence to the notes.

Prevention and clean-up measures should also be considered for each of the following stages of the development;

- Construction.
- Operational.
- Decommissioning.

Construction contractors are often unaware of the potential for impacts such as these but, when proper consultation with the local fishery board is encouraged at an early stage, many of these problems can be averted or overcome.

- Increases in silt and sediment loads resulting from construction works.
- Point source pollution incidents during construction.
- Obstruction to upstream and downstream migration both during and after construction.
- Disturbance of spawning beds during construction - timing of works is critical.
- Drainage issues.
- Sea Bed and Land Contamination

The ES should identify location of and protective/mitigation measures in relation to all private water supplies within the catchments impacted by the scheme, including modifications to site design and layout.

Developers should also be aware of available CIRIA guidance on the control of water pollution from construction sites and environmental good practice (www.ciria.org). Design guidance is also available on river crossings and migratory fish (SE consultation paper, 2000) at <http://www.scotland.gov.uk/consultations/transport/rcmf-00.asp>.

Hydrology and Hydrogeology

SEPA note that the baseline assessments should consider the natural variability in background parameters with regard to normal and extreme conditions, e.g. suspended solids, so that any modifications caused by the presence of the new structures can be put into context of the natural variability.

The production of a construction environmental management plan (CEMP) along with detailed method statements may be required, in certain cases, through environmental regulation. SEPA therefore recommend the submission of an outline CEMP with the ES which incorporates the principles of all proposed pollution prevention and mitigation measures. This approach provides a useful link between the principles of development which need to be outlined at the early stages of the project and the method statements which are usually produced following award of contract. Further guidance on the production of a CEMP can be found on SEPA's website.

Specifically, the following areas should also be addressed within the CEMP:

- Pollution prevention where our pollution prevention guidelines should be followed details of which can be found on SEPA's website;
- Storage of fuel and oil which should demonstrate full compliance with the Water Environment (Oil Storage) (Scotland) Regulations 2006. The scheme should incorporate the best practice advice contained in on SEPA's website.

Proposed temporary and long-term foul drainage facilities for workers on site must be described in the ES with regard to the on-shore grid connection facilities. Guidance and best practice advice can be found in PPG4 Disposal of sewage where no mains drainage is available.

Surface water drainage arrangements of elements such as any new access roads and buildings should incorporate the attenuation (where appropriate) and treatment principles of sustainable drainage systems (SUDS). The SUDS treatment train should be followed which uses a logical sequence of SUDS facilities in series allowing run-off to pass through several different SUDS before reaching the receiving waterbody. Further guidance on the design of SUDS systems and appropriate levels of treatment can be found in CIRIA's C697 manual entitled The SUDS Manual. Advice can also be found in the SEPA Guidance Note Planning advice on sustainable drainage systems (SUDS). Please refer to the SUDS section of the SEPA website for details of regulatory requirements for surface water and SUDS.

Engineering activities in the water environment

In order to meet the objectives of The Water Framework Directive, developments should be designed wherever possible to avoid engineering activities in the water environment. The water environment includes burns, rivers, lochs, wetlands, groundwater and reservoirs. SEPA prefer the water environment to be left in its natural state with engineering activities avoided wherever possible. Where watercourse crossings are required, bridging solutions or bottomless or arched culverts which do not affect the bed and banks of the watercourse should be used. If the proposed engineering works are likely to exacerbate flood risk then a flood risk assessment should be submitted in within the ES and SEPA should be consulted.

If any water crossing are required guidance on the design and implementation can be found in the SEPA Construction of River Crossings Good Practice Guide. Best practice guidance is also available within the water engineering section of SEPA's website. Please note that it is appreciated that this section is mainly attributed to the onshore facilities and cable connections.

Much of the coastline around the Firth of Forth has been modified by coastal development in the past. EC guidance defines cumulative impacts as "impacts that result from incremental changes caused by other past, present or reasonably foreseeable actions together with the project" (<http://ec.europa.eu/environment/eia/eia-studies-and-reports/guidel.pdf>).

Under the Water Framework Directive (WFD) the UK is now required to manage hydromorphological change in all surface water bodies to ensure that they achieve 'Good Ecological Status (GES)' and that there is no deterioration in status. This includes the consideration of hydromorphological pressures in transitional and coastal water bodies from the MHWS mark out to 3nm. In response to this a methodology to assess cumulative impacts in line with Water Framework Directive (WFD) objectives has been developed.

The cumulative assessments should consider the Neart na Gaoithe proposals alongside the existing coastal development already present within the water bodies in which landfall locations are being considered. A map and information should be included in the ES showing the areas of seabed likely to be affected by the cabling landwards of 3nm offshore limit and the area of intertidal zone that is likely to be affected by shoreline infrastructure development and cabling. This should also include information on existing coastal development e.g. length of coastal defences and/or area of historical land reclamation already present. The methodology uses a concept of 'system capacity' to measure impacts to morphological conditions. The ES should demonstrate that the proposals will not compromise WFD objectives.

11. Other Material Issues

Waste

SEPA recommend that details of how waste will be minimised at the construction stage should be included in the ES which demonstrate that:

- Construction practices minimise the use of raw materials and maximise the use of secondary aggregates and recycled or renewable materials;
- Waste material generated by the proposal is reduced and re-used or recycled where appropriate on site (for example in landscaping not resulting in excessive earth moulding and mounding). There may be opportunities to utilise surplus soils for sustainable purposes elsewhere.

To do this effectively all waste streams and proposals for their management should be identified and other materials excavated on site and the importation of any waste materials to the site. Accordingly, SEPA recommend that a site specific site waste management plan is developed to address these points. This is in accordance with the objectives of the National Waste Plan which aim to minimise waste production and reduce reliance on landfill for environmental and economic reasons.

Advice on how to prepare a site waste management plan is available on the netregs website and from Envirowise who also provide free advice on resource efficiency. Further advice on the reuse of demolition and excavation materials is available from the Waste and Resources Action Programme. Further guidance can also be found on the SEPA website. Information on waste prevention and waste minimisation is available on SEPA's waste minimisation webpage at www.sepa.org.uk/waste/resource_efficiency.aspx

Noise

SEPA recommend that the ES should provide information on the impacts and mitigation measures as required on Marine mammals, especially during the construction phase and piling operations. In particular novel methods of noise restriction may be used where bubble curtains are not effective (such as bubble wrap or neoprene insulation).

SNH note that Section 5.4.3 mentions possibility of photo ID for bottlenose dolphins (BNDs). Photo ID will be essential to determine whether any BNDs seen in the proposed development site are from the Moray Firth SAC. Otherwise, the alternative approach is to assume that all observed BNDs are from this SAC. If the developer does intend to do photo ID they will need to apply to SNH for an EPS licence⁴² (for research purposes).

The developer is thinking about using BAE systems – Environmental Risk Management Capability. In theory this is a useful tool, however, it may be limited in its source data which would affect any results. SNH will need to see the source datasets and discuss the resolution at the system is applied before

commenting more. Section 5.4.5 – also needs consideration of timing and phasing of works.

Traffic Management

The Environmental Statement should provide information relating to the preferred route options for delivering the turbines etc. via the trunk road network. The Environmental Impact Assessment should also address access issues, particularly those impacting upon the trunk road network, in particular, potential stress points at junctions, approach roads, borrow pits, bridges, site compound and batching areas etc.

Where potential environmental impacts have been fully investigated but found to be of little or no significance, it is sufficient to validate that part of the assessment by stating in the report:

- the work has been undertaken, e.g. transport assessment;
- what this has shown i.e. what impact if any has been identified, and
- why it is not significant.

13. General ES Issues

In the application for consent the applicant should confirm whether any proposals made within the Environmental Statement, eg for construction methods, mitigation, or decommissioning, form part of the application for consent.

Individual yacht clubs may have valuable contributions to make but there should always be consultation with Royal Yachting Association Scotland which will arrange consultation with member clubs. Most clubs are run by volunteers and a lack of response to a letter or e-mail does not necessarily mean that club members have nothing to contribute or are in agreement with plans.

Chamber of Shipping recommend that the Non Technical Summary clearly highlights and recognises the engagement that is warranted or the developers would have had with the CoS arrive to any conclusions. It should also include what measures they have taken to address concerns (if any) and how they intend to mitigate them prior to proceeding ahead with their plans.

SEPA suggest the following documents and data sources:

A Review of the Sources and Scope of Data on Characteristics of Scottish Waters. An Assessment of the Adequacy of the Data and Identification of Gaps in Knowledge, Mike Robertson & Ian Davies, March 2009 available <http://www.frs-scotland.gov.uk/FRS.Web/Uploads/Documents/Int0609.pdf> provides a very comprehensive summary of the data sets available for the characterisation of Scottish coastal waters.

The Foundation for Water Research (FWR) published a report "A Framework for Marine and Estuarine Model Specification in the UK" (Foundation for Water Research, 1993) providing guidelines to statistically assess model performance. Additionally the following may also prove useful 'Foundation for Water Research (1993)', and 'A Framework for Marine and Estuarine Model Specification in the UK, Report No FR0374'.

The National Marine Biological AQC Scheme is also producing a guidance document on processing biological samples from marine macrofaunal surveys. This will augment the information currently available on this topic in the CSEMP Green Book. The guide is expected to become available around April 2010.

Consultation

Developers should be aware that the ES should also be submitted in a user-friendly PDF format which can be placed on the Scottish Government website. Developers are asked to issue ESs directly to consultees. Consultee address lists can be obtained from the Energy Consents Unit. The Energy Consents Unit also requires 8 hardcopies to be issued internally to Scottish Government consultees.

Where the developer has provided Scottish Ministers with an environmental statement, the developer must publish their proposals in accordance with part 4 of the Environmental Impact Assessment (Scotland) Regulations 2000. Energy consents information and guidance, including the specific details of the adverts to be placed in the press can be obtained from the Energy Consents website; <http://www.scotland.gov.uk/Topics/Business-Industry/Energy/Energy-Consents>

Gaelic Language

Where s36 applications are located in areas where Gaelic is spoken, developers are encouraged to adopt best practice by publicising the project details in both English and Gaelic (see also Energy consents website above).

OS Mapping Records

Developers are requested at application stage to submit a detailed Ordnance Survey plan showing the site boundary and all turbines, access tracks and onshore supporting infrastructure in a format compatible with the Scottish Government's Spatial Data Management Environment (SDME), along with

appropriate metadata. The SDME is based around Oracle RDBMS and ESRI ArcSDE and all incoming data should be supplied in ESRI shapefile format. The SDME also contains a metadata recording system based on the ISO template within ESRI ArcCatalog (agreed standard used by the Scottish Government), all metadata should be provided in this format.

Difficulties in Compiling Additional Information

Developers are encouraged to outline their experiences or practical difficulties encountered when collating/recording additional information supporting the application. An explanation of any necessary information not included in the Environmental Statement should be provided, complete with an indication of when an addendum will be submitted.

Application and Environmental Statement

A developer checklist is enclosed with this report to help developers fully consider and collate the relevant ES information to support their application. In advance of publicising the application, developers should be aware this checklist will be used by government officials when considering acceptance of formal applications.

Consent Timescale and Application Quality

In December 2007, Scottish Ministers announced an aspirational target to process new section 36 applications within a 9 month period, provided a PLI is not held. This scoping opinion is specifically designed to improve the quality of advice provided to developers and thus reduce the risk of additional information being requested and subject to further publicity and consultation cycles.

Developers are advised to consider all aspects of this scoping opinion when preparing a formal application, to reduce the need to submit information in support of your application. The consultee comments presented in this opinion are designed to offer an opportunity to considered all material issues relating to the development proposals.

In assessing the quality and suitability of applications, Government officials will use the enclosed checklist and scoping opinion to scrutinise the application. Developers are encouraged to seek advice on the contents of ESs prior to applications being submitted, although this process does not involve a full analysis of the proposals. In the event of an application being void of essential information, officials reserve the right not to accept the application. Developers are advised not to publicise applications in the local or national press, until their application has been checked and accepted by SG officials.

Judicial review

All cases may be subject to judicial review. A judicial review statement should be made available to the public.

Signed

Authorised by the Scottish Ministers to sign in that behalf.

Enclosed - Developer Application Checklist

DEVELOPER APPLICATION AND ENVIRONMENTAL STATEMENT
CHECKLIST

- | | Enclosed |
|--|--------------------------|
| 1. Developer cover letter and fee cheque | <input type="checkbox"/> |
| 2. Copies of ES and associated OS maps | <input type="checkbox"/> |
| 3. Copies of Non Technical Summary | <input type="checkbox"/> |
| 4. Confidential Bird Annexes | <input type="checkbox"/> |
| 5. Draft Adverts | <input type="checkbox"/> |
| 6. E Data – CDs, PDFs and SHAPE files | <input type="checkbox"/> |

-
- | Environmental Statement | Enclosed | ES Reference
(Section & Page No.) |
|---|--------------------------|--------------------------------------|
| 7. Development Description | <input type="checkbox"/> | |
| 8. Planning Policies, Guidance and Agreements | <input type="checkbox"/> | |
| 9. Economic Benefits | <input type="checkbox"/> | |
| 10. Site Selection and Alternatives | <input type="checkbox"/> | |
| 11. Baseline Assessment data – air emissions | <input type="checkbox"/> | |
| 12. Design, Landscape and Visual Amenity | <input type="checkbox"/> | |
| 13. Construction and Operations (outline methods) | <input type="checkbox"/> | |
| 14. Archaeology | <input type="checkbox"/> | |
| 15. Designated Sites | <input type="checkbox"/> | |
| 16. Habitat Management | <input type="checkbox"/> | |
| 17. Species, Plants and Animals | <input type="checkbox"/> | |
| 18. Water Environment | <input type="checkbox"/> | |
| 19. Sub-tidal benthic ecology | <input type="checkbox"/> | |
| 20. Hydrology | <input type="checkbox"/> | |
| 21. Waste | <input type="checkbox"/> | |
| 22. Noise | <input type="checkbox"/> | |
| 23. Traffic Management | <input type="checkbox"/> | |
| 24. Navigation | <input type="checkbox"/> | |
| 25. Cumulative Impacts | <input type="checkbox"/> | |
| 26. Other Issues | <input type="checkbox"/> | |

N.B. Developers are encouraged to use this checklist when progressing towards application stage and formulating their Environmental Statements. The checklist will also be used by officials when considering acceptance of formal applications. Developers should not publicise applications in the local or national press, until their application has been checked and accepted by officials.